

**St Vincent's Hospital / SydPath**  
**Drug Measurement Information Sheet**



<b><u>Cefazolin</u></b>	First generation cephalosporin; bactericidal, interferes with bacterial cell wall peptidoglycan synthesis by binding to penicillin-binding proteins. <u>Active against</u> some Gram-negative organisms including <i>Escherichia coli</i> , <i>Klebsiella spp.</i> , <i>Moraxella catarrhalis</i> , <i>Proteus mirabilis</i> ; Gram-positive organisms including most Streptococci, MSSA and Staph saprophyticus; anaerobes including <i>Fusobacterium spp.</i> , <i>Prevotella melaninogenica</i> , <i>Propionibacterium spp.</i> - <u>Not active against</u> Pseudomonas or MRSA								
<b>WHEN TO CONSIDER TDM</b>	Consider in critically ill patients, especially those with sepsis, trauma, burns, impaired renal function or undergoing dialysis and in patients with infective endocarditis to optimise dose. In addition, TDM should be undertaken in any patient undergoing long-term therapy.								
<b>PHARMACOKINETICS</b> (may be altered in critical illness and organ dysfunction)	<table border="1"> <tr> <td>Absorption</td><td>NA - IV and IM only</td></tr> <tr> <td>Protein binding</td><td>73-86%</td></tr> <tr> <td>Clearance</td><td>Unchanged in urine &gt; 96%</td></tr> <tr> <td>Elimination t<sub>1/2</sub></td><td>1 - 2 hours</td></tr> </table>	Absorption	NA - IV and IM only	Protein binding	73-86%	Clearance	Unchanged in urine > 96%	Elimination t <sub>1/2</sub>	1 - 2 hours
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Elimination t <sub>1/2</sub>	1 - 2 hours								
<b>SAMPLE COLLECTION TIME</b>	Trough sample 24 hours after initiation or dose change.								
<b>REQUESTING &amp; COLLECTION</b>	Collect 4 mL in a purple top (EDTA) tube (no gel separator). <b>Important information required on request form:</b> <ol style="list-style-type: none"> <li>1) Time and date of last dose</li> <li>2) Time since last dose change/commencement</li> <li>3) Time of blood sample collection</li> <li>4) Dosing regimen (dose and frequency)</li> </ol>								
<b>HANDLING &amp; TRANSPORT</b>	Sample must be delivered to laboratory within 1 hour of collection. If not delivered to the lab within 2 hours of collection, centrifuge, separate plasma and freeze within 3 hours of collection.								
<b>AVAILABILITY</b>	Test generally performed 5 days a week (Monday to Friday). Specific days and timing should be confirmed with SydPath.								
<b>REFERENCE INTERVALS</b>	<b>Suggested Therapeutic Targets</b> Empiric therapy: 4 – 16mg/L <i>Note: Based on EUCAST breakpoints</i> Directed therapy: Trough >4 x MIC <b>Toxic Range:</b> Lowest trough serum cefazolin level associated with seizure = 360 mg/L (case report)								
<b>CONTACT</b>	Patient Results: (02) 8382 9100 Further information: <a href="http://www.syddpath.com.au">www.syddpath.com.au</a> - Test Database								
<b>INSTRUCTIONS FOR REFERRING LABORATORIES</b>									
Centrifuge, separate plasma within 3 hours of collection, store and transport plasma frozen.									
<b>Document approved: 24/5/2019</b>									

**References:**

1. Australian Medicines Handbook online. Accessed 03/04/2018.
2. Kirby W. M, Regamey C. (1973) Pharmacokinetics of cefazolin compared with four other cephalosporins. J Infect Dis. 128:Suppl:S341-6.
3. Nightingale CH, Greene DS, Quintiliani R. (1975) **Pharmacokinetics** and clinical use of cephalosporin antibiotics. J Pharm Sci. 1975 Dec;64(12):1899-926.
4. The European Committee on Antimicrobial Susceptibility Testing.
5. Bechtel T. P., Slaughter R. L., Moore T. D. (1980) **Seizures** associated with high cerebrospinal fluid concentrations of **cefazolin**. Am J Hosp Pharm. 37(2):271-3.
6. Yost RL, Lee JD, O'Leary JP. (1977) Convulsions associated with sodium **cefazolin**: a case report. Am Surg. 43(6):417-20.